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Ilion, New York
February 19, 1963

W. E. LEEK

DESIGN OF XP-100 - .22 Win. MAGNUM RIM FIRE

The purpose of this letter is to explain probable design and production problems encountered in producing a Model XP-100 chambered for the .22 Win. Mag. RF.

The cartridge in question is .350 inches longer than the .22 long rifle, has a rim .016 in. larger in diameter and .006 in. thicker than the .22 long rifle. The body diameter of the case is .2420 in. as compared with .226 in. for the long rifle cartridge.

The cartridge dimension variations above stated will produce the following design and production problems. The standards for design have been set by the author as the .22 R.F. XP-100 chambered for the .22 long rifle.

1. Ejector redesigned and moved rearward in the receiver to accommodate additional length and rim diameter. Standard 40X part not acceptable.
2. Bolt head (40X type) redesigned to accept larger rim diameter and thickness.
3. Right extractor redesigned to facilitate larger rim size.
4. Extractor slots in barrel altered to accept new extractor.
5. Firing pin completely redesigned to accept new ejector and location. The firing pin point may have to be moved outward from its present location to facilitate the increased rim diameter. This alteration would depend largely on ignition characteristics of the cartridge, and may not be required.
6. Left locking lug partially cut away to allow longer bolt stroke needed for feeding and extraction.
7. Main spring probably requires redesign due to necessary changes in firing pin.

HLC:T

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